Living Next Door: Worlds Apart

Law Enforcement Communication
In the 21st Century Multicultural Society

As the Boeing 777 began its descent to Tokyo's Narita Airport, our American Pilot welcomed us to Japan. As I viewed the lush green countryside spotted with Japanese architecture, quickly I knew I was someplace different from my native Central California. Little did I realize that I would soon come to appreciate those last English words that came so naturally and fluently to my ears. I had come to Japan in part to complete research on Language Translation Technology for law enforcement applications, and in part to vacation someplace where I had never been.

When You Can't Understand, Use Your Hands

My first and immediate impression upon leaving my Boeing cocoon and entering the airport was the sense of respect, efficiency and goodwill from the Japanese officials. Japan was indeed an orderly place. Many people I encountered made an effort to communicate with me in English, which I appreciated since I don't speak Japanese. This observation confirmed for me the potential value of an audible speech translation machine, not only for tourists, but for use by members of law enforcement. One such machine, the eNAVI, has already been piloted in the Land of the Rising Sun.

I read about the e-NAVI project being conducted at the Narita International Airport. According to their website, e-NAVI "…is a service to assist visitors to Japan from overseas to enjoy their stay in the country." It provides a wealth of useful information on a Personal Digital Assistant (PDA) which are provided free of charge. The e-NAVI

service is part of the e-Airport Project being undertaken at the Narita International Airport using the most advanced information technology in the world." (www.narita-airport.or.jp/e-navi/function.html). The e-NAVI project generously loaned PDAs to English speaking visitors to Japan. The service included: an English to Japanese voice translation, a Tokyo sightseeing planner, a PDA phone for free domestic and international calls for a nominal fee, a Narita Airport Guide and a Guide to Japan, which was an illustrated brochure of life, culture and society in Japan. Last but not least, it allowed unrestricted Internet access. All of these services would be offered to those participating in the trial period in February and March, 2005…which I missed by a month. I knew this when I booked my trip, but I was determined to see Japan at its technological best, even if I didn't have a talking PDA.

Lost Without Translation

I had spent most of my 26 years in law enforcement working in diverse communities and neighborhoods where Spanish, Hmong, Khmer (Cambodian) and Lao were the languages spoken. Although I had picked up a phrase or two, I was never proficient with the wide variety of languages in California's heartland. I often thought how great it would be to communicate effectively in so many languages; to understand and to be understood by those seeking help from the police. I knew of no one who could do such a thing in so many languages, although a few had gotten impressively close like the Southeast Asian Officer I know who can fluently speak four languages. I could have used an accomplished multilingual dynamo as I emerged into the heart of Tokyo by airport shuttle. As we drove along, I realized I could understand very little - I was becoming lost without translation.

The first major test of my language skills was to come my second day in Japan as I walked through the business district near my hotel. I was hungry, and wanted to taste working-class cuisine to avoid high hotel prices. I found an ordinary out of the way place where men were getting off work and meeting in customary fashion. I was met by an older woman (who I guessed owned the establishment with her husband) cooking behind the counter. I opened the menu, and discovered there was no English description or pictures. I was virtually ordering blind, and after five minutes of exchanging blank stares with my non-English speaking host, her patience exhausted, she brought me something to eat and drink of her choosing. I ordered another of both, partly because I enjoyed the offering and partly because I didn't want the agony of more blank stares. It was at this moment that I was stuck with a realization I had never quite felt before; a profound sense of embarrassment and frustration at being an intelligent person unable to understand and be understood.

I thought back to the countless professional encounters where language was a barrier. My interest was now amplified to understand how technology could bridge the gap for the police, especially in Central California and other similar areas across the Nation that speak English and a mix of other languages from across the globe (City of Fresno, 2005). Historically, language translation uses a human being to interpret words across this communication divide. In cities across the state, community meetings commonly enlist the assistance of three to four human translators to speak to those assembled. On one such occasion, the author was the keynote speaker (in slow and deliberate English), becoming increasingly distracted by the constant dialogues between the translators and

those they were assisting. The need to stop every few minutes to look for visual cues from the translators to continue helped others understand the words being spoken, but also significantly affected the momentum and meaning of the speech. Fortunately, there are options emerging that could be used to bridge the gap for effective communications among those who do not share a common language; perhaps the most promising is ***language translation technology.***

Language as a Barrier to Communication

The most widely spoken languages in the world are Mandarin (1,075,000,000), English (514,000,000), Hindustani (496,000,000), Spanish (425,000,000), Russian (275,000,000), Arabic (256,000,000), Bengali (215,000,000), Portuguese (194,000,000), Malay-Indonesian (176,000,000) and French (129,000,000) (Ethnologue, 13th Edition).

In 2002, 1,063,732 persons immigrated into the United States. Fewer than 40,000 came from countries where English is considered the primary language (2002 Yearbook of Immigration Statistics). The 2000 United States Census revealed that of the 262 million persons in America five years and older, almost 47 million spoke a language other than English, or in addition to English (U.S. Census Bureau, Census 2000). This means the potential to encounter a person who does not speak English or speaks English as a second language is very high for a monolinguistic resident in almost any city in our Country. It is crucial, therefore, that law enforcement be able to communicate effectively with the community it serves, even (and especially) those who cannot speak or understand English.

Currently, the police depend on only a few means of verbally communicating with its non-English speaking community: 1) Hiring personnel that speak a foreign language and making use of their expertise as the need arises; 2) Making use of law enforcement affiliated volunteers to translate community contacts; 3) Making use of third party translation vendors such as telephonic translation services; 4) and making use of third parties at a given scene. There are limits on both the number of candidates available for this practice and on the ability to deploy enough employees to meet the need. This has often resulted in children translating for their parents, delaying the successful delivery of police services and increasing the levels of frustration for the police and community member alike.

Multilingual communication is more than words; it is the interpretation of culture and life experiences. Three quick case studies exemplify the potential for misunderstanding, and the need for clear communication in public safety settings. As a patrol officer a number of years ago I recall having been dispatched to a call of an out of control juvenile. I learned the juvenile had convinced her non-English speaking Southeast Asian parents that if she were disciplined in any way by them, the police would take them away. This misperception was soon rectified with the assistance of an English speaking neighbor. In another instance, I was sent to a Southeast Asian family regarding trouble with their teenage son who had disrespected the family in a variety of ways. I was stunned when the older sister translated to me her father's wish that I take the son away and kill him. Instead, I was able to refer the family to a culturally literate social worker who involved the family in a variety of programs for those arriving from Southeast Asia. Finally, an especially indelible personal experience from my early days as a patrol officer drives

home the need to communicate quickly and effectively. I stopped at the scene of a stalled car at the side of the road, receiving hand signals at the outset that indicated the group was fine and not in need of assistance. None in the group spoke English, and it was apparent they needed a ride to a service station to arrange for transportation. One young man moved to sit in the patrol car, so I motioned to a female passenger to join him. Her eyes almost instantly widened and her face froze in panic. I intuitively slammed the door closed, leaving the young man alone inside until I could learn more. A more complete investigation revealed she had just been sexually assaulted by him.

As demonstrated by these cases, which are similar to accounts most any police officer working in a multicultural area could provide, it is for the community's safety and protection that we must consider equipping the police with the tools necessary to do their job. The first and foremost duty of a peace officer is to protect the innocent, a task rendered almost impossible until the bond of communication can be sustained.

Community Policing: Communicating With Each Other

Since the late 1980's the concept of Community Policing has attempted to blend the best of traditional policing (the control of crime) with contemporary efforts to access and involve communities in the partnership of public safety and policing as a part of the overall design of the community. Many of the communities most impacted by community policing are diverse neighborhoods where several languages are spoken. Community policing stresses a new mandate that expands the police beyond crime-fighting to include efforts targeted at physical and social decay, disorder, and fear of crime. Given the present and future need to bring everyone in a community into the

partnerships for safety, what better opportunity to bridge the gap between language and understanding than through the use of technology?

The heart of researching the use of translation technology was to determine its potential to improve community relationships. To surface the variety of perspectives this issue may hold, a focus group of bilingual social workers, law enforcement professionals and Information Technology experts was convened to discuss the social, technological and practical aspects of communicating through a machine or computer interface. The general findings and consensus was that 1) younger recipients of this technology would respond more positively than more senior recipients and 2) important, but non-emergency, applications such as community meetings would be the best start for the use of machine translation, and that using such technology for critical applications such as hostage negotiations and other emergencies should only be used when the science is well perfected (Belluomini, 2005).

The panel concluded their work with a consensus that the initial use of machine translation would be slow, cautious and limited, but that its use would grow and improve as science, technology and social readiness converged for a perfected product and application.

Overview of Language Technology

Instant worldwide communication continues to make the world a smaller place; a place where interactions are increased, not decreased. Many of these interactions are in real time and often make use of the spoken word. The fast paced interactions of today's world make rapid verbal communication a necessity. Nearly all major American

metropolitan areas have microcosms of the non-English speaking world. Language translation technology has evolved over the past fifteen years and is now seen in these, and other, ways:

- Traditional human verbal translation (face to face or via telephone)
- Human text translation (translation from or to written language)
- Text to text (translation via computer word processing) (Arnold, 1994)
- Text to Speech (written word to the spoken word via computerized synthesized voice, e.g., the "Phraselator") (Harrison, 2005)
- Speech to Speech (spoken phrase recognized and translated via computer into a pre-selected phrase) (Harrison, 2005)
- Speech to Speech (real time, two way translation via computer) (Arnold, 1994)
- Speech to Speech (real time, two way translation via computer, generally via cell phone) (Wahlster, 1997)

Currently, the best and most accurate methodologies of those listed is human translation. With regard to machine translation devices, however, the future is rapidly emerging. In fact, the United States Military has tested and utilized first-generation translation devices in combat and similar field conditions.

(I removed the specific reference to the Phraselator here because the discussion doesn't occur until later. Take a look and see how the flow reads now and choose your final form)

American military applications during Operation DESERT STORM were amongst the first occasions where language translation was assisted by technology. The Arabic language was not familiar to many in the United States, especially those in the military.

The first military applications of translation technology were applied to the battlefield by medical professionals. More recent American military operations in the Middle East raised similar translation needs, resulting in an acceleration of research into the potential for translation technology (Ricci, 2003).

Beginning in the late 1990's, some of the first translation technology devices used by the military were hand held computers that would speak a text phrase that was selected by the user. These so-called text-to-speech devices held pre-selected phrases and were limited to what was in the device. As hand held computers became more powerful with increased capacity, larger and more sophisticated software was developed resulting in greater capability. The speech-to-speech capabilities of these new devices allow the user to speak into a hardware device resulting in spoken translation out of a speaker (Patch, 2003).

The military found itself managing civilian populations in foreign cities, engaging non-English speaking peoples in an effort to gain their trust and maintain order. Many of the translation application needs that face the military are similar to the application needs of American law enforcement, and transitioning this technology to civilian law enforcement is both necessary and inevitable. The United States Government is experimenting with language translation technology through its Law Enforcement Analysis Facility (LEAF) (TechBeat, Spring 2001) and with technologies funded and developed by the United States Defense Advanced Project Agency (DARPA), so far resulting in technologies which make it possible for today's one-way text-to-speech and speech-to-speech devices or *machines*, used for language translation.

In fact, another name applied to the science of language translation by the use of computer technology is *Machine Translation*. Machine Translation is defined as: "in computational linguistics, publishing, and other fields, the use of computers to conduct large-scale translation operations" (The Columbia Electronic Encyclopedia, 6th ed.). The term is becoming more recognized and associated with so many aspects of technology. For instance your washing *machine*, does the tedious and time consuming work of laundering your clothes, just as the sewing *machine* makes short work of what used to take days and weeks.

Making use of machines to do complicated or strenuous work has its roots in world history, but with the application of computer science and software development, machines are becoming less and less dependant upon human manipulation. During the ultimate applications of two-way translation technology machines will process speech from one language to another, independent of human interaction.

A speech-to-speech technology which shows promise is language translation by use of cell phone technology. A caller of one language communicates with a caller of a different language by cell phone when their respective language is translated through software located in a computer along the speech path. This technology is currently limited to the English, German and Japanese languages, and so far is between 80 and 90% accurate (Wahlster, 1997). The improvements for these devices are ongoing.

Application: Eventually

Currently, the most advanced translation technologies commercially available can speak and process predetermined phrases one-way; primarily English to a variety of languages. Although some optimistic private commercial enterprises expect to have some form of

dynamic two way machine translation available within a year or two, DARPA estimates such a dynamic capability will not be readily available for about five years (Harrison, 2005). Current applications were developed primarily for military enforcement contacts where one-way speech is unequivocally to the point. Although this one-way translation technology is becoming available for law enforcement applications, most policing contacts with the public are related to non-enforcement public service. Although common use of two-way translation technology will not happen any time soon, it will certainly happen at some point because the need is great and the technology is improving. One of the first machines to communicate in foreign languages for law enforcement applications is the "Phraselator".

Is the Current State of Translation Technology the Answer?

Although the need to improve multilingual communication for public safety applications through machine translation devices is well recognized, the actual machines and two way speech technology is not yet a reality. Recently, however, the Neighborhood Health Plan of Rhode Island (the state's largest Medicaid health plan) obtained $250,000 in grant funding from the federal Health Resources and Service Administration to purchase VoTec International's "Phraselator"; a one-way translation device built upon a PDA platform which can translate 1,000 critical need phrases into 40 languages. The devices, which sell for $2,300 each, will be distributed to health care providers and rescue workers throughout Rhode Island (Davis, 2005). The Oneida County Sheriff's office in Oriskany, New York, is also experimenting with the Phraselator in their jail medical screening process (TechBeat, Fall 2003). The results are promising, and they are seeking funding to purchase more Phraselator's in the near future (Phraselator Press Release, 2004).

Although it is too soon to know how well one-way communication will meet the needs of policing and social service, it is encouraging to know that time, money and effort are focused on technology to help meet the need for translation. The current state of Translation Technology is in part an answer, but certainly not the answer. One-way translation technology is a good beginning, but it addresses only the tip of the iceberg of the many complexities of language translation. The ultimate goal is achieving fluent, speech-to-speech, two-way machine translation of one language to another.

Conclusion

In a time of reduced resources and increased public expectation to deliver more with less, technology must be leveraged and creatively applied to important mandates. One of those important mandates is to effectively communicate with community members in a way that improves the delivery of service in a language and manner they understand; the quality and equality of service depends on it.

For public safety, members of multilingual communities who do not adequately speak English should be accessed in their own language for best results and greatest accuracy. It is important to note that most contacts with non-English community members is not enforcement related and an important objective is for understanding to occur and relationships to be maintained. Because the quality of communication is important, the continued improvements in machine translation and language translation technology will have to exchange words, inflection and tone in such a way to communicate understanding, not just words.

As policing and other public service agencies experiment with new forms of human interaction through the use of technology, the gates will be thrown open for improvement and innovation making use of two-way machine language translation communication a distinct possibility for law enforcement within the next five years.

I embarked on a journey to conduct technological research, but instead became the subject of my own social quandary. In doing so, I achieved a greater understanding of those who must live in a world of misunderstanding. Communicating in one's own language goes beyond the expediency of trading information; it has very personal qualities associated with it that foster interactions that build relationships. The quality of communication has a direct link to the quality and maintenance of those relationships. Whether you are a police officer working a beat or patron trying to eat, if we can not communicate with one another, we are living next door, but worlds apart.

References

2002 Yearbook of Immigration Statistics, U.S. Citizenship and Immigration Services.

Arnold, D.J. (1994). Machine Translation: an Introductory Guide (Ed.) Blackwells-NCC, London, 1994, ISBN: 1855542-17x.

Belluomini, D. (Summer, 2005). POST Command College Project: How will language translation technology impact community relationships in an urban police agency by the year 2009?

City of Fresno (2005). City of Fresno Bilingual Pay Incentive Program qualification list.

Davis, Marion (2005). R.I. military device aids health workers. Providence Business News, PBN.com

Dunn, Kenneth (2003), Language tools-automated translation. Military Intelligence Professional Bulletin, U.S. Army Intelligence Center and School.

Ethnologue, 13th Edition and other sources

Harrison, Ann (2005), Machines Not Lost in Translation. Wired.com (March 9, 2005).

Kelling, G. L. Moore, M. H. (1988). The evolving strategy of policy. Perspectives on Policing. Washington DC: National Institute of Justice.

Patch, Kimberly (2003), PDA translates speech. TRNmag.com (December 17/24, 2003).

Phraselator (2004) Vortec's Phraselator™ Now Speaking 53 Languages. Press Release (August, 2004), www.phraselator.com/press/releases/2004_03_1.aspx

Ricci, Lawrence (2003), Wireless phrase-recognition PDA deployed to Afghanistan. Military Intelligence Professional Bulletin, U.S. Army Intelligence Center and School.

Speros, J. (1993, June). The philosophy. California Peace Officer. pp.25-27.

TechBeat (Spring 2001). National Law Enforcement and Corrections Technology Center

TechBeat (Fall 2003). Nothing lost in the translation. National Law Enforcement and Corrections Technology Center

Trojanowicz, R. (1990, October). Community policing is not police-community relations. FBI Law Enforcement Bulletin, pp.6-11.

Trojanowicz, R., & Bucqueroux, B. (1990). Community policing: acommunity perspective. Cincinnati: Anderson Publishing Co..

Trojanowicz, R. C., & Bucqueroux, B. (1994). Community policing: How to get started. Cincinnati, OH: Anderson Publishing Co..

U.S. Census Bureau, Census 2000, Summary File 3, Table PCT 10, released Feb. 25, 2003

Wahlster, Wolfgang . (1997). Mobile Speech-to-Speech Translation of Spontaneous Dialogs: An Overview of the Final Verbmobil System. DFKI GmbH, Saarbrucken, Germany.

Williams, H., & Murphy, P. (1990). The evolving strategy of police: A minority view. Perspectives on Policing. Washington DC: National Institute of Justice.